

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)
2. (Previously Presented) The electric machine of claim 8 wherein each of the magnet slots comprises a portion having a shape complimentary to a shape of at least a portion of the magnet.
3. (Original) The electric machine of claim 2 wherein the portion of the magnet slot having the complimentary shape is elongated.
4. (Currently Amended) The electric machine of claim 8 wherein the at least one non-magnetic bulbous structure formed at a rotor core internal location proximate to an expected pole location of a magnet emplaced in the magnet slot comprises an end of the magnet slot abutting at least one non-magnetic region having a width in excess of a width of the magnet slot where at least a portion of the magnetic slot is substantially magnet-shaped.
5. (Original) The electric machine of claim 4 wherein the at least one non-magnetic region having a width in excess of a width of the magnet slot comprises a substantially bulbous region.
6. (Previously Presented) The electric machine of claim 5 wherein the portion of the rotor core that protrudes at least partially into the magnet slot is disposed between a substantially linear portion of the magnet slot and the substantially bulbous region.

7. (Canceled)

8. (Currently Amended) An electric machine, comprising:

a stator; and

a rotor core mounted for rotation with respect to the stator ~~[[,]]; the rotor core comprising a number of a~~

a plurality of magnet slots and at least one non-magnetic structure, each of the number of the magnet slots segmented by a portion of the rotor core that protrudes at least partially into the magnet slot;

at least one non-magnetic bulbous structure, the at least one non-magnetic bulbous structure is formed at a rotor core internal location proximate to an expected pole location of a magnet receivable in the magnet slot;

a filler forming at least a part of the at least one non-magnetic bulbous structure, at least some of the filler located in the magnet slot, wherein the filler comprises at least one of an epoxy, a resin, or an adhesive.

9. (Previously Presented) The electric machine of claim 8, further comprising:

a number of permanent magnets, each of the permanent magnets disposed within a respective one of the magnet slots.

10. (Canceled)

11. (Previously Presented) The electric machine of claim 9, further comprising:

a number of non-magnetic wedges, each non-magnetic wedge disposed adjacent to a respective one of the permanent magnets to establish a movement-resistant friction fit between the permanent magnet and the rotor core about the magnet slot.

12-13. (Canceled)

14. (Previously Presented) The electric machine of claim 15 wherein the load absorbing material comprises a filler selected from the group consisting of an epoxy, a resin, or an adhesive.

15. (Currently Amended) An electric machine, comprising:
a stator;
a rotor mounted for rotation with respect to the stator; ~~the rotor comprising~~
a number plurality of magnet slots separated from each other by at least a portion
of a lamination layer, each slot comprising opposed end portions and a central portion disposed
between the end portions, the central portion of each of the magnet slot slots shaped to
complimentarily receive a magnet, the opposed end portions separated from the central portion
by portions of the rotor that protrude at least partially into the slot, and at least one of the end
portions is substantially bulbous-shaped;
a number of magnets complimentarily received in the central portions of the
magnet slots of the rotor; and
a load absorbing material filling at least a portion of each of the end portions of
the magnet slots.

16. (Previously Presented) The electric machine of claim 15, wherein the end portions of the magnet slots have a width greater than a width of the central portion of the magnet slots.

17.-25. (Canceled)

26. (Currently Amended) A rotor assembly of an electric machine, comprising:

a lamination layer configured to be axially stacked in a series of lamination layers to form a rotor core of an electric machine;

a plurality of magnet slots separated from each other by at least a portion of the lamination layer, each slot comprising opposed end portions and an elongate portion disposed between the end portions, and at least one of the end portions is expanded bulbous shaped the lamination layer forming at least a part of at least one internal slot, each internal slot comprising an elongate portion and at least one expanded bulbous end portion disposed at one end of the elongate portion;

a portion of the lamination layer protruding at least partially into the internal slot between the elongate portion and the at least one expanded bulbous end portion;

a permanent magnet disposed within each internal slot and substantially, laterally restrained in the slot by the portion of the lamination layer; and

a load absorbing material received in the end portions of the internal slots between a portion of a wall forming the end portion and the respective permanent magnet disposed in the internal slot.

27. (Previously Presented) The rotor assembly of claim 26 wherein the load absorbing material is selected from the group consisting of epoxy, resin, or adhesive.

28. (Currently Amended) ~~The rotor assembly electric machine~~ of claim 8 wherein at least one of the number of the magnet slots includes cavity formed at a first end of the magnet slot and where the cavity is separated from a remaining portion of the magnet slot by the portion of the rotor core that protrudes at least partially into the magnet slot.

29. (Previously Presented) The rotor assembly of claim 28 wherein the cavity is a bulbous shaped cavity.

30. (Currently Amended) The ~~rotor assembly~~ electric machine of claim 8 wherein the portion of the rotor core that protrudes at least partially into the magnet slot abuts a first end of the magnet that is ~~located~~ receivable in the magnet slot.

31. (Currently Amended) The ~~rotor assembly~~ electric machine of claim 8 wherein the portion of the rotor core that protrudes at least partially into the magnet slot comprises a notch.

32. (Currently Amended) The ~~rotor assembly~~ electric machine of claim 15 wherein at least one of the respective magnets complementarily received in the central portion of at least one of the respective magnet slots of the rotor is laterally restrained by the portions of the rotor that protrude at least partially into the at least one of the respective magnet slots.

33. (Currently Amended) The ~~rotor assembly~~ electric machine of claim 15 wherein the portions of the rotor that protrude at least partially into the slot comprise notches.

34. (Previously Presented) The rotor assembly of claim 26 wherein a portion of the lamination layer protruding at least partially into the internal slot between the elongate portion and the at least one expanded bulbous end portion comprises a notch.

35. (Currently Amended) An electric machine, comprising:
a stator; and
a rotor core extending in a longitudinal direction and in a radial direction, the rotor core mounted for rotation about a longitudinal axis with respect to the stator ~~[[,]]; the rotor core comprising a number of a~~
a plurality of magnet slots in the rotor core and with at least one non-magnetic bulbous structure formed at a rotor core internal location proximate to an expected pole location of a magnet received in one of the magnet slots, wherein the magnet slots are arranged in the rotor core to be substantially perpendicular to the radial direction; and

a filler forming at least a part of the at least one non-magnetic bulbous structure, at least some of the filler located in the magnet slot, wherein the filler comprises at least one of an epoxy, a resin, or an adhesive.

36. (Previously Presented) The electric machine of claim 35 wherein at least one of the magnet slots is each segmented by a portion of the rotor core that protrudes at least partially into the magnet slot.

37. (Previously Presented) The electric machine of claim 35 wherein at least one of the number of the magnet slots includes a cavity formed at a first end of the magnet slot.

38. (Previously Presented) The electric machine of claim 37 wherein the cavity is a bulbous shaped cavity.

39. (New) A magnet slot residing in a laminate layer of an electric machine rotor, comprising:

a first end portion that is substantially bulbous-shaped;

a second end portion; and

a central portion disposed between the first end portion and the second end portion, the central portion shaped to complementarily receive a magnet.

40. (New) The magnet slot of claim 39 wherein the second end portion is substantially bulbous-shaped.

41. (New) The magnet slot of claim 39 wherein the first end portion is a bulbous shaped cavity.

42. (New) A laminate layer of a non-squirrel cage rotor of a permanent magnet electric machine, comprising:

a plurality of magnet slots disposed in the laminate layer, wherein each of the plurality of magnet slots comprises:

a substantially bulbous-shaped first end portion;

a substantially bulbous-shaped second end portion; and

a central portion disposed between the first end portion and the second end portion, the central portion shaped to complementarily receive a magnet; and

a plurality of laminate layer portions, one laminate layer portion between two adjacent magnet slots.

43. (New) The laminate layer of claim 42, further comprising:

a non-magnetic filler material residing in the first end portion and the second end portion.

44. (New) The laminate layer of claim 43 wherein the filler material comprises at least one of an epoxy, a resin, an adhesive, or air.